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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,478	04/15/2005	Yukie Mori	123497	6501

7590

09/15/2006

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EXAMINER

THOMAS, JAISON P

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 09/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/531,478	MORI, YUKIE	
	Examiner	Art Unit	
	Jaison P. Thomas	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/25/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1,2 and 4 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 11 of copending Application No. 11/092643. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed towards organic PTC compositions which contain epoxy resin, curing agents, and electrically conductive particles wherein the conductive particles can have protrusions from the surface of the particle.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 102(a) as being anticipated by Shea et al. (US Patent 6459358).

Shea teaches a current limiting PTC device which has two electrodes with a thin film of a polymer material which is electrically conducting disposed between the electrodes. The polymeric material contains short chain aliphatic diepoxide, conductive filler particles, curing agent and minor amount of bisphenol A epoxy resin (Abstract). Samples 1-8 in Table 1 show additionally the presence of an epoxidized polybutadiene (which examiner construes as a flexible epoxy resin) (Column 7) which is added especially in the absence of the bisphenol A resin to increase the flexibility of the resulting PTC device. Conductive filler particles can include nickel (Column 6, line 21)

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and can take on a variety of shapes including flakes, rods and spheroids (which examiner construes as having protrusions) (Column 6, lines 35-36).

With respect to the limitations of bending elasticity in Claim 3, the examiner respectfully submits that the prior art inherently meets the claimed limitation.

Specifically, the reference teaches identical components and is produced in the same or similar manner and would inherently possess the bending elasticity required.

6. Claims 1-6 are rejected under 35 U.S.C. 102(a) as being anticipated by Smith et al. (US Patent 6375867).

Smith teaches a process for making a PTC conductive polymer from an epoxy resin, an epoxy reactive diluent (which examiner construes as being a flexible epoxy resin), conductive filler, and an acid anhydride curing agent (Abstract). The conductive filler can come in a variety of shapes including nickel fiber, flake, and beads (Abstract and Column 7, lines 56-58).

With respect to the limitations of bending elasticity in Claim 3, the examiner respectfully submits that the prior art inherently meets the claimed limitation.

Specifically, the reference teaches identical components and is produced in the same or similar manner and would inherently possess the bending elasticity required.

7. Claims 1-6 are rejected under 35 U.S.C. 102(a) as being anticipated by Cole et al. (US Patent 6362722).

Cole teaches a current limiting device comprised of a composite containing a high glass transition epoxy, a low viscosity polyglycol epoxy (which examiner construes as being a flexible epoxy resin), a curing agent and a conductive powder (Abstract) wherein the composition is disposed between two electrodes (see Fig. 1, drawing part number 3 and Column 4, line 11). The conductive particles are disclosed as nickel type 255 particles with surface areas of 0.75 g/m^2 (Column 6, lines 33-35 and lines 47-49). Examples disclose samples containing a range of the low viscosity polyglycol epoxies (labeled flexibilizers) in Table 1 (Column 7).

Examiner notes from applicant's specification of examples the types of nickel powders used as well as surface area values of said particles and submits that Cole utilizes the same materials and would inherently possess the protrusions required by the instant claims.

With respect to the limitations of bending elasticity in Claim 3, the examiner respectfully submits that the prior art inherently meets the claimed limitation. Specifically, the reference teaches identical components and is produced in the same or similar manner and would inherently possess the bending elasticity required.

8. Claims 1-6 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Handa (US Patent 6452476).

Handa teaches an organic PTC thermistor comprised of a thermosetting polymer matrix, low-molecular organic compound, and conductive particles which have spiky protuberances (Abstract) and these particles are made of nickel (Column 8, lines 49-

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50). The thermosetting resins are selected from a broad group of materials including epoxies, unsaturated polyesters, polyurethanes, and phenols (Column 5, lines 23-26). The reference also suggests that the resins disclosed can be polymerized together to form a polymer (Column 7, lines 23-24) which the examiner construes as forming a flexible epoxy resin.

In the alternative, Handa is relied upon as disclosed above. However, Handa does not teach flexible epoxy resin as required by the instant claims.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to understand the copolymerization of the epoxy with one of the other thermosetting resins disclosed above would yield a flexible epoxy resin.

With respect to the limitations of bending elasticity in Claim 3, the examiner respectfully submits that the prior art inherently meets the claimed limitation.

Specifically, the reference teaches identical components and is produced in the same or similar manner and would inherently possess the bending elasticity required.

9. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Yasuko et al. (JP 06-089802).

Yasuko teaches a PTC composition comprised of a thermosetting resin (Ciba Geigy CY205 which examiner construes as being a flexible epoxy resin), conductive particles, and a hardening agent wherein the conductive particles have a "spike" (pgs. 2-3, paras. 0021-0023).

With respect to the limitations of bending elasticity in Claim 3, the examiner respectfully submits that the prior art inherently meets the claimed limitation.

Specifically, the reference teaches identical components and is produced in the same or similar manner and would inherently possess the bending elasticity required.

10. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiroshi et al. (JP 05- 198404).

Hiroshi teaches a PTC composition comprised of a thermosetting resin (Ciba Geigy Araldite F which examiner construes as being a flexible epoxy resin), conductive particles, and a hardening agent wherein the conductive particles have a "spike" (paras. 0012-0016).

With respect to the limitations of bending elasticity in Claim 3, the examiner respectfully submits that the prior art inherently meets the claimed limitation.

Specifically, the reference teaches identical components and is produced in the same or similar manner and would inherently possess the bending elasticity required.

11. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Yasuko et al. (JP 05- 198403).

Yasuko teaches a PTC composition comprised of a thermosetting resin (Ciba Geigy Araldite F which examiner construes as being a flexible epoxy resin), a hardening agent and conductive particles, wherein the conductive particles have a "spike" (paras. 0012-0015).

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With respect to the limitations of bending elasticity in Claim 3, the examiner respectfully submits that the prior art inherently meets the claimed limitation. Specifically, the reference teaches identical components and is produced in the same or similar manner and would inherently possess the bending elasticity required.

12. Claims 1-3 are rejected under 35 U.S.C. 102(a) as being anticipated by Baigrie et al. (US Patent 5250228).

Baigrie teaches a a conductive polymer composition in which a particulate conductive filler is distributed in a polymeric component comprised of an amorphous thermoplastic resin and a thermosetting resin (Abstract) in which PTC applications of such a material are discussed (Column 1, lines 10-60). In a second embodiment of the invention, the polymer composition is distributed between two electrodes to cause current to flow through the composition (Column 2, lines 12-14). Among the thermosetting resins that are used, one type includes flexible epoxy resins such as polyglycol diepoxies, diglycidyl esters of linoleic acid, and diglycidyl ester of a bisphenol (Column 4, lines 4-11). Selected curing agents are disclosed in Column 5, lines 1-48 and include anhydride compounds (Column 5, line 17 and line 32).


With respect to the limitations of bending elasticity in Claim 3, the examiner respectfully submits that the prior art inherently meets the claimed limitation. Specifically, the reference teaches identical components and is produced in the same or similar manner and would inherently possess the bending elasticity required.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jaison Thomas
Examiner
9/6/2006


Mark Kopec
Primary Examiner